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AMSAT NEWS SERVICE
ANS-295

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-295 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 295.01
  From AMSAT HQ KENSINGTON, MD.
DATE October 22, 2017
To All RADIO AMATEURS
BID: $ANS-295.01

AMSAT Describes RadFxSat/Fox-1B Commissioning Plans

AMSAT Vice-President Engineering, Jerry Buxton, NØJY wrote what to initially expect when the AMSAT RadFxSat/Fox-1B cubesat is launched as a passenger on NASA's ELaNa XIV mission on Friday, Nov. 10, from Vandenberg Air Force Base, California.

Liftoff will be aboard a United Launch Alliance Delta II rocket from Space Launch Complex 2 and is targeted for 1:47 a.m. PT (4:47 a.m. ET, 9:47 am UTC) at the opening of a 65-second launch window. Launch coverage will begin on NASA Television and the agency’s website at 1:15 a.m. PT.

RadFxSat/Fox-1B will automatically come up in Beacon Mode, transmitting a beacon and voice ID (Veronica saying "RadFxSat Safe Mode") every two minutes, starting about 50 minutes after deployment. The AMSAT command stations will want to see voltage and current data to determine that it's healthy and conduct various tests before opening it up for general use.

Telemetry makes the engineering and operations teams very happy, starting ASAP after startup (~55 minutes after deployment) and for

the next 72-96 hours at least as we look for successful startup, watch the general health and function as the satellite begins to acclimate to space, and perform the on orbit checkout. Ground stations are also invited to continue uploading received telemetry for the life of the satellite.

If you are capturing telemetry with FoxTelem please be sure that "Upload to Server" is checked in your settings, and your Ground Station Params are filled in as well. You can help AMSAT and everyone waiting to get on the air with RadFxSat tremendously, by capturing RadFxSat telemetry.

In the initial Beacon Mode, the transmitter is limited to 10 seconds on time then does the two minutes off cycle as Paul pointed out. For those of you capturing telemetry, that means that you will only see Current frames and no High or Low frames because the High and Low are truncated as it takes just over 10 seconds to send two frames. Veronica may also be cut off before she gets to say her whole ID string. If Veronica is speaking, "RadFxSat Fox-1B Safe Mode" which is the full ID, if it's cut off then we're still in Beacon Mode. If we are seeing good data from user telemetry data, it is likely when it comes over the U.S. for the first good pass we will command it from Beacon Mode to normal Safe Mode, which then puts RadFxSat in full (still Safe Mode though) operation and transmits a full two frames of telemetry which is one Current frame followed by, and alternating each ID cycle, a High or a Low frame. Veronica now has time to make the whole ID announcement, in Safe Mode.

YOUR HELP IS NEEDED!

Jerry, NØJY commented further ...

Help your friends and all of our satellite ham friends get on the air and have fun sooner by being polite and patient!

The on orbit checkout procedure is similar to Fox-1A/AO-85 and could be completed in as little as a few days if we have the cooperation of the users. It is very important, not to mention just plain good Amateur Operating Practice, to refrain from using the transponder uplink so we can do the on orbit tests, including when we turn on transponder mode for testing. I can't stress enough, the importance of this cooperation not just for us but for all users, simply having a little patience so we can conduct the tests as quickly and accurately as possible.

AMSAT will make it broadly known when the tests are complete and the transponder is available for all to use. If you hear someone on the transponder, please don't assume that it is open for general use - check the AMSAT website, Facebook, Twitter, to be sure you're not accidentally jumping in with and unwittingly interfering with the commissioning process.

Lots of hams put thousands of volunteer hours of their time into making RadFxSat happen. Just like any ham radio project you might undertake, we build satellites. We do it because we like to, and when we're done we freely share our project with hams everywhere as is the spirit of amateur radio.

I am asking all satellite hams to contribute just a little bit of your time to the fun now, by being patient and just gathering telemetry, not using the transponder uplink, and helping us complete the last few days of getting RadFxSat in orbit and operating for all of you.

Thank you very much, see you on the bird!

[ANS thanks AMSAT Vice-President Engineering, Jerry Buxton, NØJY, for the above information]

CAS-4A and CAS-4B Amateur Radio Linear Transponders Activated

On Wednesday, October 18, 2017 the amateur radio linear (SSB/CW) transponders on the CAS-4A and CAS-4B satellites were activated.

CAMSAT's amateur radio payloads piggybacked on the optical remote sensing micro-satellites ZHUHAI-1 01 (OVS-1A / CAS-4A) and ZHUHAI-1 02 (OVS-1B / CAS-4B) that were launched at 0300 GMT on Thursday, June 15, 2017 from the Jiuquan Satellite Launch Center, on the CZ-4B launch vehicle. The primary payload of the launch was a hard X-ray modulation telescope satellite (HXMT).

CAS-4A Amateur Radio Payload:
  Call sign: BJ1SK
  VHF Antenna: one 1/4? monopole antenna with max. 0 dBi gain located at +Z side
  UHF Antenna: one 1/4? monopole antenna with max. 0 dBi gain located at -Z side
  CW Telemetry Beacon: 145.855 MHz 17 dBm
  AX.25 4.8k Baud GMSK Telemetry: 145.835 MHz 20 dBm
  U/V Linear Transponder Downlink: 145.870 MHz 20 dBm, 20 kHz bandwidth, Inverted
  U/V Linear Transponder Uplink: 435.220 MHz

CAS-4B Amateur Radio Payload:
  Call sign: BJ1SL
  VHF Antenna: one 1/4? monopole antenna with max. 0 dBi gain located at +Z side
  UHF Antenna: one 1/4? monopole antenna with max. 0 dBi gain located at -Z side
  CW Telemetry Beacon: 145.910 MHz 17 dBm
  AX.25 4.8k Baud GMSK Telemetry: 145.890 MHz 20 dBm
  U/V Linear Transponder Downlink: 145.925 MHz 20 dBm, 20 kHz bandwidth, Inverted
  U/V Linear Transponder Uplink: 435.280 MHz

[ANS thanks Alan, BD1DU, for the above information]

Caution Urged in Using High Duty Cycle Digital Modes via Satellite

A report in ANS-288 discussed an experiment operating with the WSJT-X FT8 via satellite. Satellite operators have gained more experience with this mode over this past week.

As a result of on-the-air observation other satellite users planning to try FT8 or MSK144 modes via satellite are encouraged use caution using these modes and possibly avoid their use completely in light of problems.

Dave, KG5CCI wrote, "He noticed a very hard time getting into the transponder. The pass was nearly overhead, and the 3w-4w that is

normally sufficient was barely cutting it. I also noticed it was 'up and down' alot, whereas some moments it was easy to get in, then it would be nearly impossible. There were also pockets of 'noise' all over the transponder, that sounded somewhat digital, but I just couldn't place them." Further investigation revealed that an MSK144 signal in the transponder passband was causing the problems.

Matthew, NJ4Y noted, "Experimentation isn't the problem, too much power is. It's bad enough on SSB, worse with CW, and killer on constant duty cycle modes like FT8."

To gain a full understanding of the situation readers are encouraged to follow the amsat-bb message thread which can be accessed at: http://www.amsat.org/pipermail/amsat-bb/2017-October/064896.html

[ANS acknowledges the comments submitted via amsat-bb from W5RKN, KG5CCI, KB1PVH, W5PFG, and others]

ARISS International Chair Frank Bauer, KA3HDO, Wins G3AAJ Trophy

ARISS International Chair Frank Bauer, KA3HDO, has been honored with the Ron Broadbent, G3AAJ, Trophy. The presentation came during the AMSAT-UK International Space Colloquium this past weekend.

"AMSAT-UK totally shocked me yesterday at the colloquium with the Ron Broadbent
Trophy," Bauer reacted. "I was nearly speechless when asked to come up and receive the trophy for ARISS work. I mentioned that, early on, Ron was a phenomenal supporter and contributor to ARISS, with his sage advice and guidance."

The G3AAJ trophy is awarded annually by AMSAT-UK to an individual or group for
outstanding service to the Amateur Satellite service. The trophy was donated to
AMSAT-UK by the late Ron Broadbent, G3AAJ.

ARISS received the G3AAJ trophy last year in recognition of the ARISS UK team's
dedication in working with the UK Space Agency to facilitate the Principia Mission of astronaut Tim Peake, KG5BVI, aimed at engaging students in 10 UK schools in science, technology, engineering, and mathematics (STEM) subjects.

[ANS thanks ARRL for the above information]

AMSAT-UK YouTube Channel Updated with 2017 Colloquium Recordings

AMSAT-UK has begun uploading recordings of all talks from the 2017 Colloquium,
October 14-15 to the AMSAT-UK YouTube Channel:
https://www.youtube.com/user/AMSATUK

Some of the videos have already been uploaded; refresh your screen occasionally to to catch additional 2017 Colloquium uploads.

2017: An introduction to Amateur satellites - David Johnson, G4DPZ and
Carlos
Eavis G3VHF
https://www.youtube.com/watch?v=1Tj2rUsNpPs&t=1039s

2017: Es'hail-2 Geostationary Amateur Satellite - Peter Guelzow DB2OS
(AMSAT-DL)
https://www.youtube.com/watch?v=L67pza0hCZw

2017: The Goonhilly project (aka playing with big boys toys) - Noel Matthews
G8GTZ
https://www.youtube.com/watch?v=xzrcLFFEq74

[ANS thanks AMSAT-UK for the above information]

Upcoming ARISS Contact Schedule as of 2017-10-19

Chiddix Junior High School, Normal, IL, direct via W9AM
The ISS callsign is presently scheduled to be NA1SS
The scheduled astronaut is Joe Acaba KE5DAR (***)
Contact is a go for: Mon 2017-10-23 15:31:15 UTC 27 deg (***)

Beaconsfield State School, Mackay, Queensland, Australia, telebridge via
IK1SLD (***)
The ISS callsign is presently scheduled to be IRØISS (***)
The scheduled astronaut is Paolo Nespoli IZØJPA (***)
Contact is a go for: Thu 2017-10-26 08:23:02 UTC 40 deg (***)

Glanmire Community College, Cork, Ireland, direct via EI5CRC and Colegiul
National Calistrat Hogas Piatra Neamt, Piatra Neamt, Romania, telebridge
via EI5CRC
The ISS callsign is presently scheduled to be OR4ISS
The scheduled astronaut is Joe Acaba KE5DAR (***)
Contact is a go for: Thu 2017-10-26 09:55:45 UTC 68 deg (***)

Istituto Tecnico Tecnologico “Enzo Ferrari”, Borgo A Mozzano, Italy and
Liceo Statale “G. D. Cassini”, Sanremo, Italy direct via IQ5LU and IQ1SM
The ISS callsign is presently scheduled to be IRØISS
The scheduled astronaut is Paolo Nespoli IZØJPA
Contact is a go for: Sat 2017-10-28 08:13:31 UTC 24 deg (***)
Watch for Ham TV (***)

[ANS thanks Charlie, AJ9N, for the above information]

Satellite Shorts From All Over

+ Valdir Lima, PY5/PW8PM and Dave Swanson, KG5CCI completed a 7763km
contact via AO-7. During his activation of the GG35 and GG36 grids
Valdir also made contact with PT9BM PU2NGB PT2AP LW2DAF NJ4Y KO4MA
K4FEG KG5CCI. Video of the contacts can be found on YouTube:
https://youtu.be/L2m0byYTxug (via Valdir Lima, PY5/PW8PM)

+ Sean Kutzko KX9X was interviewed on Ham Talk Live Episode 86.
The topic was Getting Started with Satellites with KX9X
Listen to the podcast at:

https://www.spreaker.com/user/hamtalklive/episode-86-getting-started-with-satellit_1

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Lee McLamb, KT4TZ
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